**Methods 1 Revision:**

**Data Handling Questions**

*There are 2 similar parts to each question, if you get help with the 1st part try to do the 2nd part by yourself.*

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| --- | --- | --- | --- | --- |
| **No.** | **Questions** | | | **Marks** |
| 1(a) | There are seven red and three blue balls in a bag. I am going to take a ball out of the bag at random. What is the probability that the ball will be blue? | | | 1 |
| 1(b) | I have a fair six-sided dice, numbered one to six. I roll the dice.  What is the probability that I roll a number greater than two? | | | 1 |
| 2(a) | A 3-sided spinning top with sides 1, 2 and 3 is spun.  Copy and complete the possibility space table to show all the possible outcomes if the spinner is spun twice.  Calculate the probability that they show the same number. | | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  | Spin 1 | | | |  |  | 1 | 2 | 3 | | Spin 2 | 1 | 1,1 | 1,2 |  | | 2 |  |  | 2,3 | | 3 |  |  |  | | 3 |
| 2(b) | |  |  |  |  | | --- | --- | --- | --- | |  |  | 5p coin | | |  |  | H | T | | 1p coin | H |  | HT | | T |  |  | | A 5p coin and a 1p coin are flipped.  Complete this possibility space for the combinations in which they can land.  Find the probability of getting two heads. | | 3 |
| 3(a) | One bag of coins contains three 10p coins and two 50p coins. Another bag contains one 10p coin and one 50p coin. One coin is removed at random from each bag. Make a possibility space and use it to find the probability that a 50p coin is taken from each bag. | | | 3 |
| 3(b) | One bookshelf contains two storybooks and three textbooks. The next shelf holds three storybooks and one text book. Draw a possibility space showing the various ways in which you could pick up a pair of books, one from each shelf. Use this to find the probability that   |  |  |  | | --- | --- | --- | | 1. both books are story books | 1. both books are textbooks | 1. one of each | | | | 4 |
| 4(a) | A card is drawn from an ordinary deck. Calculate the probability that it is  a) a heart or club b) a 2 or a picture  c) a 3 or a diamond d) a red or a picture card | | | 4 |
| 4(b) | I throw a fair die twice. Find the probability that I throw:  a) 5 then 2 b) an even then odd number  c) an even and odd number in any order | | | 3 |
| 5(a) | A bag contains 7 red tokens and 5 green tokens. Peter pulls out one token, records the colour, keeps the token, and then pulls out another token. Find:  a) P(Two red tokens)  b) P(a red and a green token) | | | 2 |
| 5(b) | Jack has a bag of sweets. It has 3 green sweets, 2 red sweets and 4 yellow sweets. Jack pulls out three sweets, one by one, and eats them. Find:  a) P(three green sweets)  b) P(one of each colour)  c) P(2 green sweets) | | | 3 |
| 6(a) | How many children liked orange juice best?  How Many children liked water best?  How many children liked both orange juice and water?  How many children didn’t like orange juice or water?  How many children gave answers altogether in this survey? | Venn diagram of favourite drinks. | | 4 |
| 6(b) | A Venn diagram of favourite music. | How many children liked only pop?  How many children liked rock and hi-hop?  How many children liked only rock? How many children liked hip-hop and pop?  How many children liked only hip-hop? How many children liked pop and rock? 7. How many children liked all 3 types of music?  How many children didn’t like any of these musical types?  How many children altogether were involved in the survey? | | 9 |
| 7(a) | A coin is tossed and a die is rolled.  Draw a tree diagram to represent this experiment.  Calculate the probability of   * 1. a tail and a 5 showing   2. a head and an even number occurring | | | 4 |
| 7(b) | A box contains 8 red counters and 12 white ones.  A counter is drawn at random from the box and then replaced. A second counter is then drawn.  Draw a tree diagram to represent this experiment.  Determine the probabilities that   * 1. both counters will be read   2. both counters will be white   3. one counter will be white and the other red. | | | 5 |
| 8(a) | A bag contains 3 red balls and 2 green ones.  A ball is drawn from the bag but **not replaced**, a second ball is then drawn.   * 1. draw a tree diagram showing the various possibilities   2. what is the probability that a red ball will be followed by a red ball   3. What is the probability of two green balls being drawn   4. Find the probability of a green ball being followed by a red ball | | | 5 |
| 8(b) | A box contains 3 red and 4 black balls. A ball is drawn, its colour noted and then replaced. This is done 3 times. Draw a Probability Tree to show the possibilities. Use the tree to answer the following   * 1. Find the probability of drawing red then black then red   2. What is the probability of drawing red then red then black   3. Calculate the probability of drawing black then red then black   4. Determine the probability of drawing three black balls | | | 6 |